



## IPCC Software for the 2006 Guidelines Background

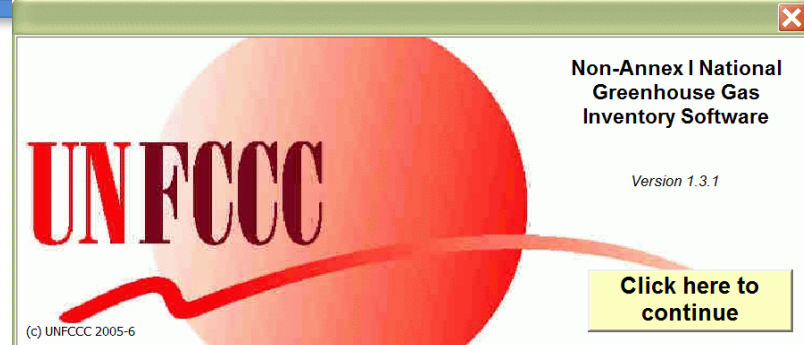
*Simon Eggleston, Head TFI TSU*

Side Event, COP17/CMP7, Durban, South Africa,  
Wednesday 30<sup>th</sup> November 2011

# 2006 IPCC Guidelines

- The 2006 IPCC Guidelines for National Greenhouse Gas Inventories was approved by the IPCC in 2006.
  - ❖ It updated the Revised 1996 IPCC Guidelines and two sets of Good Practice Guidance
  - ❖ It was the culmination of 2½ years efforts by over 250 experts worldwide
  - ❖ It is currently being considered by the UNFCCC for use by Annex I parties for reporting to the UNFCCC – currently Annex I Parties must use earlier guidelines
  - ❖ It is already widely used in whole or in part

# "Old" 1996 Software



- The IPCC produced software implementing the Revised 1996 Guidelines
- The maintenance of this software has been taken over by the UNFCCC Secretariat
- This software
  - ❖ Aims to be used by those with limited resources and experience
  - ❖ Is also a valuable teaching aid
  - ❖ Is based on the worksheets in the revised guidelines
  - ❖ Uses MS Excel spreadsheets and macros

# New Software for 2006 Guidelines

- Following the completion of the 2006 IPCC Guidelines the TFI decided to produce new software implementing the new guidelines
- An expert meeting in Doha in January 2007 considered the overall needs and design of the software
- Subsequently the Task Force Bureau and IPCC Panel agreed to proceed with the development in two phases
  - ❖ The First to produce a demonstration version for the energy sector
  - ❖ The Second to produce the complete software
- The software development was tendered and awarded to SPIRIT a.s.

# Objectives

- The objectives of the software are to:
  - ❖ Facilitate preparation of national GHG inventories according to 2006 Guidelines either for complete inventories or for separate categories or groups of categories.
  - ❖ assist in training and inventory review
  - ❖ harmonise reporting of greenhouse gas inventories
  - ❖ archive data and complete inventories (which may consist of estimates for a number of years).

# Users of software

- The primary target groups of users are:
  - ❖ Inventory compilers in all Parties to the UNFCCC with limited resources without their own inventory systems/software and who wish to apply default methods,
  - ❖ Trainers and trainees on national GHG inventory compilation,
- In addition, a range of other potential users has been identified
  - ❖ Reviewers of national inventories
  - ❖ Academics/Researchers
  - ❖ UNFCCC Secretariat
  - ❖ Project developers

# Design

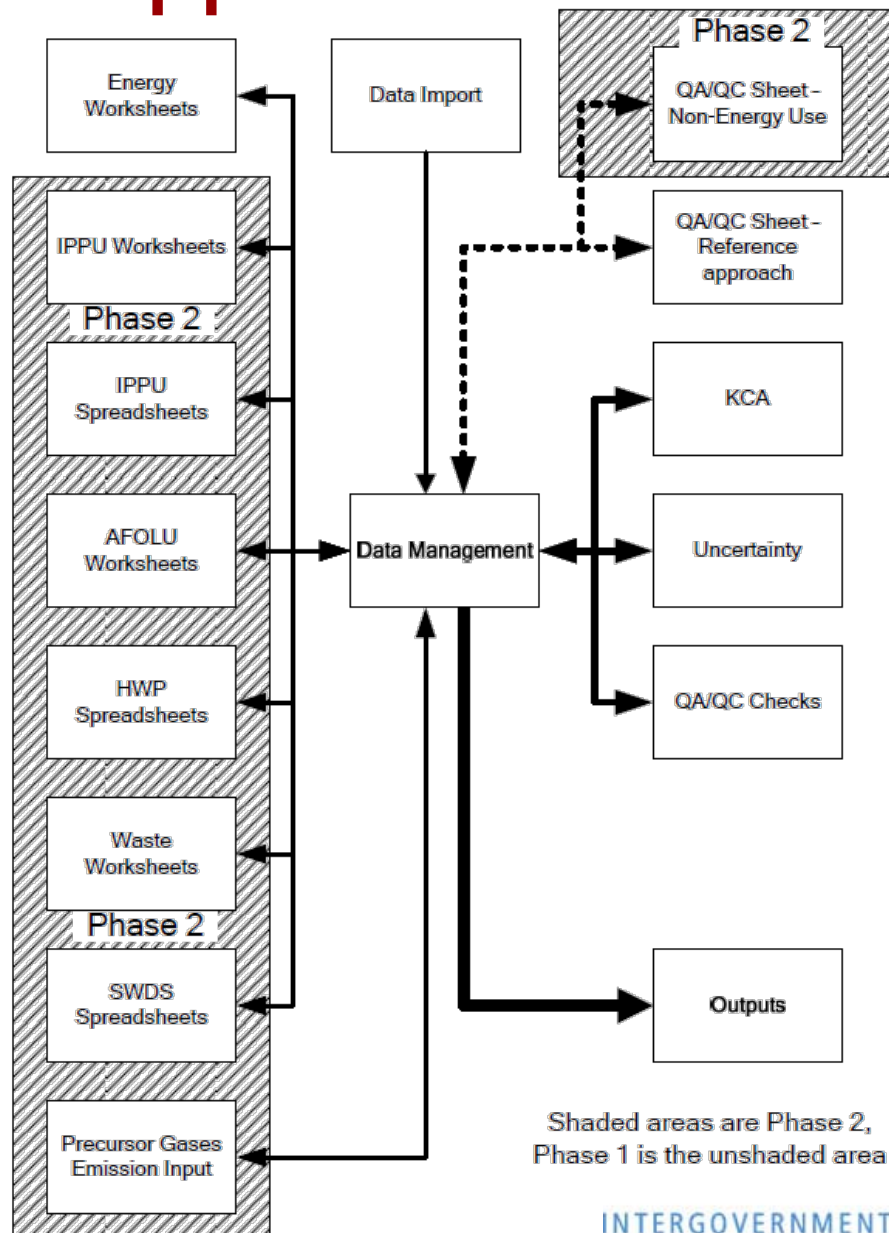
- While the software should emulate the worksheets it need not be spreadsheet based – a database approach is used.
- It is modular – it can be used for individual categories and data and results can be imported and exported
- It does not need powerful hardware
- Software should be freely distributable
- Help should be available
- Languages – while the first version is in English it should be possible to add other languages

# Functionality

- Worksheets where data is entered and emissions estimated
  - ❖ Ability to stratify and add sub-categories
  - ❖ Default emission factors from the 2006 Guidelines should be available
  - ❖ Global Warming Parameters or other metrics should not be fixed
  - ❖ Notation Keys as in the Guidelines should be available
- Outputs in printable tables, Excel or XML for CRF input
  - ❖ All Reporting Tables available
- Key Category Analysis and Uncertainty modules
- QA/QC checks such as completeness flags
- Ability to add references and comments



# Phased Approach





- IPCC 2006 Categories**
- 1 - Energy
    - 1.A - Fuel Combustion Activities
      - 1.A.1 - Energy Industries
        - 1.A.1.a - Main Activity EI
          - 1.A.1.a.i - Electricity
            - 1.A.1.a.ii - Combined
            - 1.A.1.a.iii - Heat Plan
          - 1.A.1.b - Petroleum Refin
          - 1.A.1.c - Manufacture of
            - 1.A.1.c.i - Manufacturer
            - 1.A.1.c.ii - Other Ener
        - 1.A.2 - Manufacturing Industr
          - 1.A.2.a - Iron and Steel
          - 1.A.2.b - Non-Ferrous Me
          - 1.A.2.c - Chemicals
          - 1.A.2.d - Pulp, Paper and
          - 1.A.2.e - Food Processin
          - 1.A.2.f - Non-Metallic Min
          - 1.A.2.g - Transport Equip
          - 1.A.2.h - Machinery
          - 1.A.2.i - Mining (excludin
          - 1.A.2.j - Wood and wood
          - 1.A.2.k - Construction
          - 1.A.2.l - Textile and Leat
          - 1.A.2.m - Non-specified I
        - 1.A.3 - Transport
          - 1.A.3.a - Civil Aviation
            - 1.A.3.a.i - Internation
            - 1.A.3.a.ii - Domestic
          - 1.A.3.b - Road Transport
            - 1.A.3.b.i - Cars
              - 1.A.3.b.i.1 - Pass
              - 1.A.3.b.i.2 - Pass

**Fuel Combustion Activities**

Worksheet

Sector: Energy  
 Category: Fuel Combustion Activities  
 Subcategory: 1.A.1.a.i - Electricity Generation  
 Sheet: CO2, CH4 and N2O from fuel combustion by source categories - Tier 1

Data

Fuel Type: Liquid Fuels      Uncertainties for Liquid Fuels      Conversion Factor Type:  NCV  GCV

Liquid Fuels	Energy Consumption			CO2		CH4		N2O		Remark	
	A Consumption (Mass, Volume or Energy Unit)	B Conversion Factor (TJ/Unit) (NCV)	C Consumption (TJ) (C=A*B)	D CO2 Emission Factor (kg CO2/TJ)	Z Amount Captured (Gg CO2)	E CO2 Emissions (Gg CO2) E=C*D/10^6-Z	F CH4 Emission Factor (kg CH4/TJ)	G CH4 Emissions (Gg CH4) G=C*F/10^6	H N2O Emission Factor (kg N2O/TJ)		I N2O Emissions (Gg N2O) I=C*H/10^6
Crude Oil	200	Gg	42.3	8460	73300	620.118	3	0.02538	0.6	0.005076	
Orimulsion	300	Gg	27.5	8250	77000	635.25	3	0.02475	0.6	0.00495	
*		Gg									
<b>Grand Summary</b>				16710		1255.368		0.05013		0.010026	

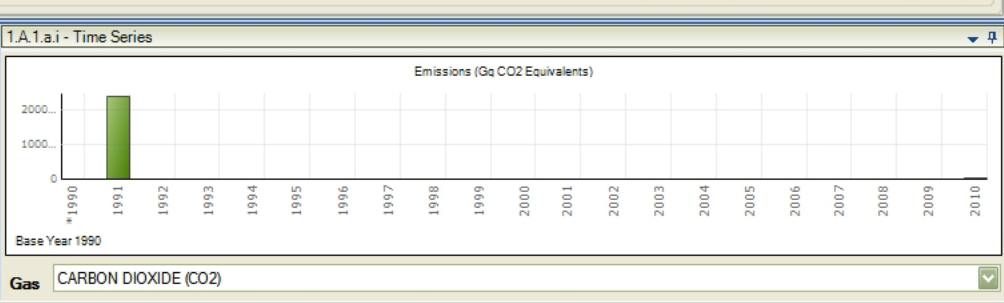
Notation Key: None      Delete selected rows...      Save current row

IPCC 2006 Guidelines

1.A.1.a.i - Electricity Generation - Guidelines/Information comes here...

Save

Worksheet remarks



# Now

- The software is being finalised
  - ❖ We encourage as many people as possible to look at it and to send us any comments, bugs etc.
  - ❖ We aim to release a complete version widely early next year
- Today we want to introduce and demonstrate the software

It is available for download and testing from:

<http://www.ipcc-nggip.iges.or.jp/support/support.html>



## Thank-you